<u>REMARKS/ARGUMENTS</u>

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 1-4 and 11-14 are currently pending, Claims 1 and 11 having been amended. The changes and additions to the claims do not add new matter and are supported by the originally filed specification, for example, on page 9, line 30 to page 11, line 24; and page 12, lines 9-25.

In the outstanding Office Action, Claims 1 and 11 were rejected under 35 U.S.C. §102(e) as being anticipated by <u>Zhu et al.</u> (U.S. Patent No. 7,043,210, hereafter "<u>Zhu</u>"); and Claims 2-4 and 12-14 were rejected under 35 U.S.C. §103(a) as being unpatentable over <u>Zhu</u> in view of <u>Golitschek et al.</u> (WO 02/067491, hereafter "<u>Golitschek</u>").

With respect to the rejection of Claim 1 under 35 U.S.C. §102(e), Applicants respectfully submit that the amendment to Claim 1 overcomes this ground of rejection. Amended Claim 1 recites, *inter alia,*

> a modulation unit configured to modulate data in a hierarchical manner using multiple types of modulation techniques and to produce hierarchically modulated data that includes signal states for the multiple types of modulation techniques, such that a portion of a bit sequence which represents constellation points in a constellation plane in accordance with a first modulation technique of the modulation techniques is identical with a bit sequence which represents constellation points in a constellation plane in accordance with a second modulation technique of the modulation techniques;

In a non-limiting example, Fig. 6 shows that two bits of data (e.g., "11") are modulated using QPSK modulation and that four bits of data (e.g., "1110") are modulated using 16QAM modulation. Figs. 6 and 9 illustrate how within a same quadrant, two bits modulated using QPSK modulation are identical with the beginning two bits of the four bits modulated using 16 QAM modulation. Thus, a modulation unit in the above example

generates hierarchically modulated data that includes signal states for both the QPSK and 16QAM modulation techniques, in which a portion of a bit sequence in accordance with 16QAM modulation is identical with a bit sequence in accordance with QPSK modulation.

Zhu is directed to adaptive coding and modulation. Fig. 2 shows a base station which includes a baseband processor 22 and transmit circuitry 24 to perform modulation on data to be transmitted (see col. 4, lines 53-60). Zhu describes incorporating a hierarchal coding and modulating scheme where there are 4 bits (B0, B1, B2, and B3) to be modulated. Zhu describes that the two most significant bits of data (B0 and B1) are modulated using QPSK modulation and the remaining two bits of data (B2 and B3) are modulated using 16QAM modulation (see col. 5, lines 7-14). Therefore, half of a 4-bit data word is modulated using one modulation scheme and the other half is modulated using a different modulation scheme. Therefore, the portion of the bit sequence that is modulated by QPSK modulation (bits B0 and B1) must be different than the portion (B2 and B3) modulated by 16QAM modulation because they are different halves of the same bit sequence. Thus, Zhu does not describe producing hierarchically modulated data in which a portion of a bit sequence modulated in accordance with 16QAM modulation is identical with a bit sequence modulated in accordance with QPSK modulation.

Therefore, Zhu fails to disclose or suggest "a portion of a bit sequence which represents constellation points in a constellation plane in accordance with a first modulation technique of the modulation techniques is identical with a bit sequence which represents constellation points in a constellation plane in accordance with a second modulation technique of the modulation techniques," as defined by amended Claim 1.

Thus, Applicants respectfully submit that amended Claim 1 (and all associated dependent claims) patentably distinguishes over Zhu.
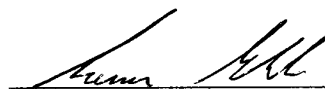
Golitschek has been considered but fails to remedy the deficiencies of Zhu with regard to amended Claim 1. Therefore, Applicants respectfully submit that amended Claim 1 (and all associated dependent claims) patentably distinguishes over Zhu and Golitschek, either alone or in proper combination.

Amended independent Claim 11 recites features similar to those of Claim 1 discussed above. Therefore, Applicants respectfully submit that amended Claim 11 (and all associated dependent claims) patentably distinguishes over Zhu and Golitschek, either alone or in proper combination.

Consequently, in light of the above discussion and in view of the present amendment, the outstanding grounds for rejection are believed to have been overcome. The present application is believed to be in condition for formal allowance. An early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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